SPREADSHEET APPLICATIONS

Curriculum Content Frameworks

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Grade Levels: 9, 10, 11, 12 Course Code: 492450	Prerequisite: Keyboarding
Course Description: Spreadsheet Applications is a one-semester course in which students use computer programs to analyze quantitative data. Emphasis is placed on the role and value of spreadsheets, financial reporting, budgeting, planning, and forecasting.	

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Unit 1: Introduction to Spreadsheets
Hours: 4

Terminology: Cell, Column, Range, Row, Spreadsheet

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		**ACADEMIC and WORKPLACE SKILLS** What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
1.1 Define *spreadsheet*		Foundation	Listening	Comprehends ideas and concepts related to spreadsheets [1.2.1] Evaluates oral information/presentation [1.2.2]
			Reading	Analyzes and applies what has been read to a specific task [1.3.2] Applies information and concepts derived from printed materials [1.3.3] Applies/Understands technical words that pertain to subject [1.3.6]
1.2 Identify and describe parts of a spreadsheet	1.2.1 Identify the parts of a spreadsheet	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
1.3 Working with spreadsheets	1.3.1 Open a spreadsheet 1.3.2 Save a spreadsheet	Foundation	Science	Applies knowledge to complete a practical task [1.4.3] Uses equipment and techniques in working with spreadsheets [1.4.23]
1.4 Navigate within a spreadsheet	1.4.1 Select cells or range of cells 1.4.2 Enter data	Foundation	Science	Applies knowledge to complete a practical task [1.4.3] Uses equipment and techniques in working with spreadsheets [1.4.23]

Unit 2: Creating Simple Spreadsheets
Hours: 8

Terminology: Alignment, Autocomplete, Autofill, Autoformat, Bold, Border, Copy, Font, Freezing tiles, Landscape orientation, Move, Numbers, Portrait orientation, Selection, Spell check, Text

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		**ACADEMIC and WORKPLACE SKILLS** What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
2.1 Define *text* and *numbers*	2.1.1 Enter text 2.1.2 Enter numbers 2.1.3 Use autofill 2.1.4 Use autocomplete	Foundation	Listening Reading Science	Comprehends ideas and concepts related to spreadsheets [1.2.1] Evaluates oral information/presentation [1.2.2] Analyzes and applies what has been read to specific task [1.3.2] Applies/Understands technical words that pertain to subject [1.3.6] Applies knowledge to complete a practical task [1.4.3]
2.2 Explain formatting	2.2.1 Use alignments 2.2.2 Use bold, borders 2.2.3 Use autoformat 2.2.4 Change column width and row height 2.2.5 Use font and font size	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
2.3 Describe print options	2.3.1 Preview spreadsheet 2.3.2 Change orientation 2.3.3 Print a selection	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
2.4 Explain editing	2.4.1 Copy data 2.4.2 Move data 2.4.3 Insert and delete columns and rows 2.4.4 Use spell check 2.4.5 Freeze tiles	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]

Unit 3: Worksheet Formulas and Functions
Hours: 12

Terminology: Absolute reference, Argument, Average, Count, Date, Formula, Function, Max, Min, Now, Relative reference, Sum

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
3.1 Construct basic formulas	3.1.1 Order of operations 3.1.2 Enter formulas 3.1.3 Print formulas 3.1.4 Auto recalculate	Foundation	Arithmetic/ Mathematics	Applies a mathematical formula to solve a problem [1.1.3] Computes using a formula [1.1.14] Operates technical equipment to reach mathematical conclusions [1.1.30]
3.2 Explain cell references	3.2.1 Relative cell reference 3.2.2 Absolute cell reference 3.2.3 Mixed cell reference	Foundation	Arithmetic/ Mathematics	Applies a mathematical formula to solve a problem [1.1.3] Computes using a formula [1.1.14] Operates technical equipment to reach mathematical conclusions [1.1.30]
3.3 Identify parts of a function	3.3.1 Equal sign 3.3.2 Function name 3.3.3 Argument	Foundation	Arithmetic/ Mathematics	Applies a mathematical formula to solve a problem [1.1.3] Computes using a formula [1.1.14] Operates technical equipment to reach mathematical conclusions [1.1.30]
3.4 Use function formulas	3.4.1 Sum 3.4.2 Average 3.4.3 Count 3.4.4 Max 3.4.5 Min 3.4.6 Date 3.4.7 Now	Thinking	Problem Solving	Demonstrates logical reasoning in reaching a conclusion [4.4.2]

Unit 4: Advanced Print Options
Hours: 6

Terminology: Footer, Gridlines, Header, Scaling, Scenario, Split screen

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
4.1 Page setup	4.1.1 Change margins 4.1.2 Set print area 4.1.3 Header/footer 4.1.4 Scaling 4.1.5 Gridlines 4.1.6 Page order	Foundation	Arithmetic/ Mathematics	Operates technical equipment to reach mathematical conclusions [1.1.30]
4.2 Formulas	4.2.1 Display formulas 4.2.2 Print formulas	Foundation	Arithmetic/ Mathematics	Operates technical equipment to reach mathematical conclusions [1.1.30]
4.3 Advanced print options	4.3.1 Print titles 4.3.2 Split screen 4.3.3 Scenarios or custom views	Foundation	Arithmetic/ Mathematics	Operates technical equipment to reach mathematical conclusions [1.1.30]

Unit 5: Advanced Formatting
Hours: 7

Terminology: Ascending, Descending, Merge, Orientation, Template

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
5.1 Format cells	5.1.1 Number format 5.1.2 Text orientation 5.1.3 Merge cells 5.1.4 Shrink to fit 5.1.5 Wrap text	Foundation	Arithmetic/ Mathematics	Operates technical equipment to reach mathematical conclusions [1.1.30]
5.2 Borders and shading	5.2.1 Fonts 5.2.2 Patterns 5.2.3 Colors 5.2.4 Drawing 5.2.5 Clip art	Foundation	Arithmetic/ Mathematics	Operates technical equipment to reach mathematical conclusions [1.1.30]
5.3 Templates	5.3.1 Using templates 5.3.2 Creating templates	Thinking	Problem Solving	Demonstrates logical reasoning in reaching a conclusion [4.4.2]
5.4 Sorting	5.4.1 Ascending 5.4.2 Descending	Foundation	Arithmetic/ Mathematics	Operates technical equipment to reach mathematical conclusions [1.1.30]
5.5 Advanced copy and paste	5.5.1 Paste special 5.5.2 Copy between worksheets 5.5.3 Grouping/ungrouping	Foundation	Arithmetic/ Mathematics	Operates technical equipment to reach mathematical conclusions [1.1.30]

Unit 6: Advanced Functions
Hours: 9

Terminology: And, Counta, Filter, HLookup, If, INT, PMT, Round, Vlookup

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
6.1 Functions	6.1.1 If 6.1.2 PMT 6.1.3 Counta 6.1.4 INT 6.1.5 Round 6.1.6 Vlookup 6.1.7 Hlookup	Foundation	Arithmetic/ Mathematics	Uses basic numerical concepts in practical situations [1.1.32] Uses computer in mathematical applications -- information processing, problem solving [1.1.38]
6.2 Nested	6.2.1 If 6.2.2 And 6.2.3 Or	Foundation	Arithmetic/ Mathematics	Uses basic numerical concepts in practical situations [1.1.32] Uses computer in mathematical applications -- information processing, problem solving [1.1.38]
6.3 Database functions	6.3.1 Filters 6.3.2 Advanced filters 6.3.3 List functions 6.3.4 Subtotals	Thinking	Reasoning	Applies rules and principles to a new situation [4.5.1]
6.4 Advanced formulas	6.4.1 3-D references	Thinking	Reasoning	Sees relationship between two or more ideas, objects, or situations [4.5.5]

Unit 7: Spreadsheet Charting
Hours: 10

Terminology: Chart, Embed, Label, Legend

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	**Application**	**Skill Group**	**Skill**	**Description**
7.1 Chart basics	7.1.1 Identify and describe parts of a chart 7.1.2 Identify and describe common chart types	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
7.2 Work with charts	7.2.1 Create common chart types 7.2.2 Create chart titles and labels 7.2.3 Add grids to charts 7.2.4 Add shading and/or color to charts 7.2.5 Add/Remove legends	Foundation	Arithmetic/ Mathematics	Constructs graphs/charts/tables [1.1.16] Creates tables, graphs, diagrams, and charts to convey quantitative information [1.1.18]
7.3 Print charts	7.3.1 Preview charts 7.3.2 Print embedded charts 7.3.3 Print chart sheet	Foundation	Science	Uses equipment and techniques in working with spreadsheets [1.4.24]
7.4 Create advanced charts	7.4.1 Change location (embedded or chart sheet) 7.4.2 Change orientation of data series 7.4.3 Exploded charts 7.4.4 3-D charts 7.4.5 Combination charts	Foundation	Arithmetic/ Mathematics	Constructs graphs/charts/tables [1.1.16] Creates tables, graphs, diagrams, and charts to convey quantitative information [1.1.18]

Glossary
Unit 1: Introduction to Spreadsheets

1. Cell – the intersection of a column and a row on a spreadsheet

2. Column – vertical arrangement of data in a spreadsheet identified by letters across the top of the worksheet window

3. Range – selected group of cells on a worksheet identified by the cell in the upper left corner and the cell in the lower right corner, separated by a colon (i.e., A3:C5)

4. Row – horizontal arrangement of data in a spreadsheet identified by numbers on the left side of the worksheet window

5. Spreadsheet – a grid of rows and columns containing numbers, text, and formulas; the purpose of a spreadsheet is to solve problems that involve numbers

Unit 2: Creating Simple Spreadsheets

1. Alignment – how text is positioned between the margins (left, center, right)
2. Autocomplete – a software function that attempts to complete a cell entry
3. Autofill – a software function that allows cell contents to be copied and adjusted based on selected data
4. Autoformat – a collection of font, patterns, and alignment that can be applied to a range of data
5. Bold – darker and thicker than normal format
6. Border – a solid line on any or all sides of a cell
7. Copy – an imitation or reproduction of an original
8. Font – defines appearance and shape of letters, numbers, and special characters
9. Freezing tiles – the process of causing vertical and horizontal tiles to remain stationary while scrolling through other parts of the spreadsheet
10. Landscape orientation – a page configuration in which the document is wider than it is long
11. Move – relocate data from one location to another
12. Numbers – numeric data – which can be values, dates, or times – on which calculations are to be performed
13. Portrait orientation – a page configuration in which the document is longer than it is wide
14. Selection – the active cell or cells
15. Spell check – a software function that compares words in the worksheet against words contained in its dictionary
16. Text – any data containing a letter, hyphen, or space not used in calculations

Unit 3: Worksheet Formulas and Functions

1. Absolute reference – a reference that refers to a specific location
2. Argument – part of a formula that contains the specific values necessary to perform the function
3. Average – a function that averages a group of numbers
4. Count – a function that counts all the blank spaces in a range
5. Date – a function that displays the serial number of a supplied date
6. Formula – an instruction the software program uses to calculate a result
7. Function – a predefined formula that performs calculations by using specific values, or arguments, in a particular order
8. Max – a function that indicates the highest value in the range
9. Min – a function that indicates the lowest value in the range
10. Now – a function that displays current date and time as a serial number; numbers to the left of the decimal point represent the date; those to the right represent the time
11. Relative reference – a reference that refers to a location that is relative to the original cell
12. Sum – a function that adds up a column of figures

Unit 4: Advanced Print Options

1. Footer – repeated information that appears in the bottom margin of a page

2. Gridlines – light gray outlines surrounding each cell in a spreadsheet; gridlines don't normally print

3. Header – repeated information that appears in the top margin of a page

4. Scaling – reducing or enlarging information to fit on a specified number of pages

5. Scenario – a what-if analysis tool that can be used to create several versions of a worksheet, based on changing variables

6. Split screen – a feature that allows the user to view different parts of a large worksheet at the same time by splitting the worksheet vertically or horizontally into panes

Unit 5: Advanced Formatting

1. Ascending – an arrangement of items in alphabetical order (A-Z) or numerical order (1, 2, 3…); dates arranged from oldest to most recent

2. Descending – an arrangement of items in alphabetical order (Z-A) or numerical order (10, 9, 8…); dates arranged from most recent to oldest

3. Merge – to combine a range of cells into one cell

4. Orientation – the direction (vertical or horizontal) of text

5. Template – a pre-designed or semicompleted document that can be used to create a new document

Unit 6: Advanced Functions

1. And – a function that sets up a conditional statement to test data; if all conditions are met, the result is displayed
2. Counta – a function that counts the number of selected records
3. Filter – display the records in a database that match specified criteria
4. HLookup – a function that searches the top row of a table for the contents of a specified cell
5. If – a logical function that sets up a conditional statement to test data; the truth or falsity of the condition will determine the results of the statement
6. INT – rounds a supplied number down to the nearest integer
7. PMT – displays the periodic payment of an annuity, based on regular payments and a fixed periodic interest rate
8. Round – rounds a number to a specified number of decimal places
9. VLookup – searches the first column for the contents of a specified cell

Unit 7: Spreadsheet Charting

1. Chart – information presented in the form of graphs or tables
2. Embed – to place on the same worksheet as data
3. Label – information describing some part of a worksheet and used to identify what the numbers (values) mean
4. Legend – identifies each bar in a chart